NVDA P000802 US Unkown Herewith

Atty Dkt. No. U.S. Serial No. Filed:

Applicant: Maufer et al.

Title: NETWORK PROTOCOL PROCESSING FOR
FILTERING PACKETS

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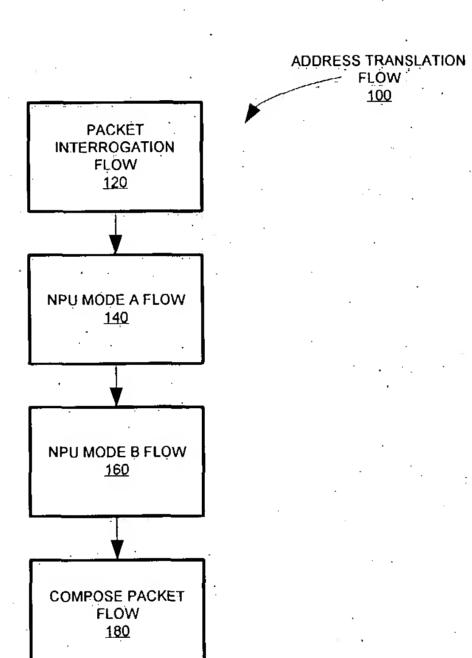


FIG. 1

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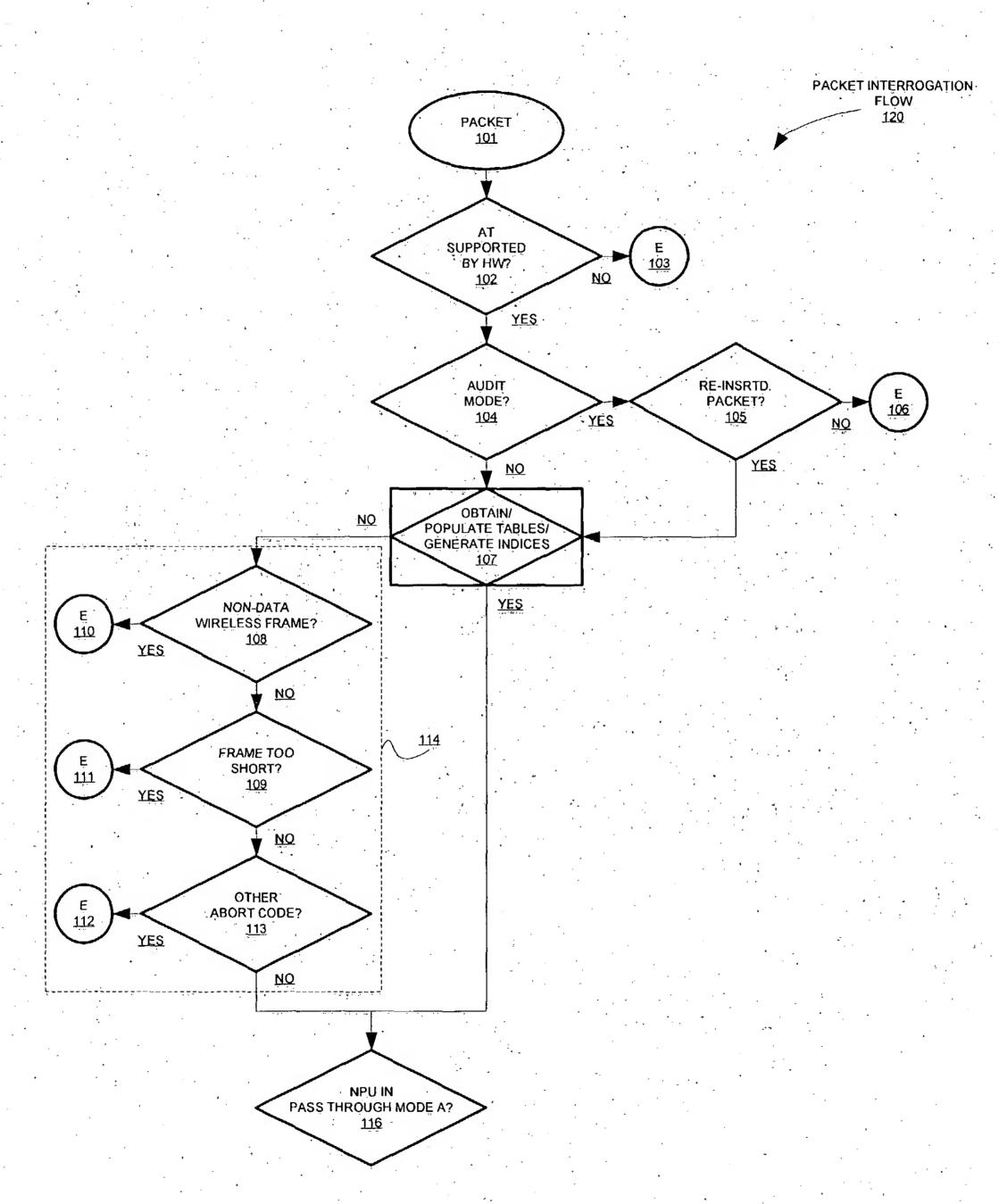


FIG. 2A-1

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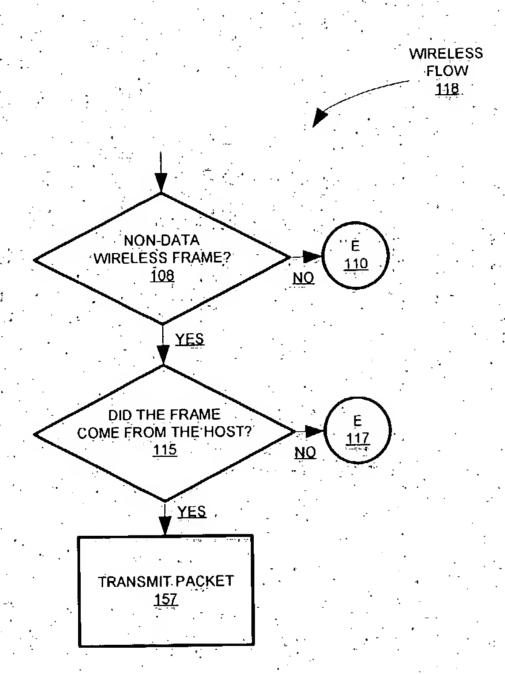


FIG. 2A-2

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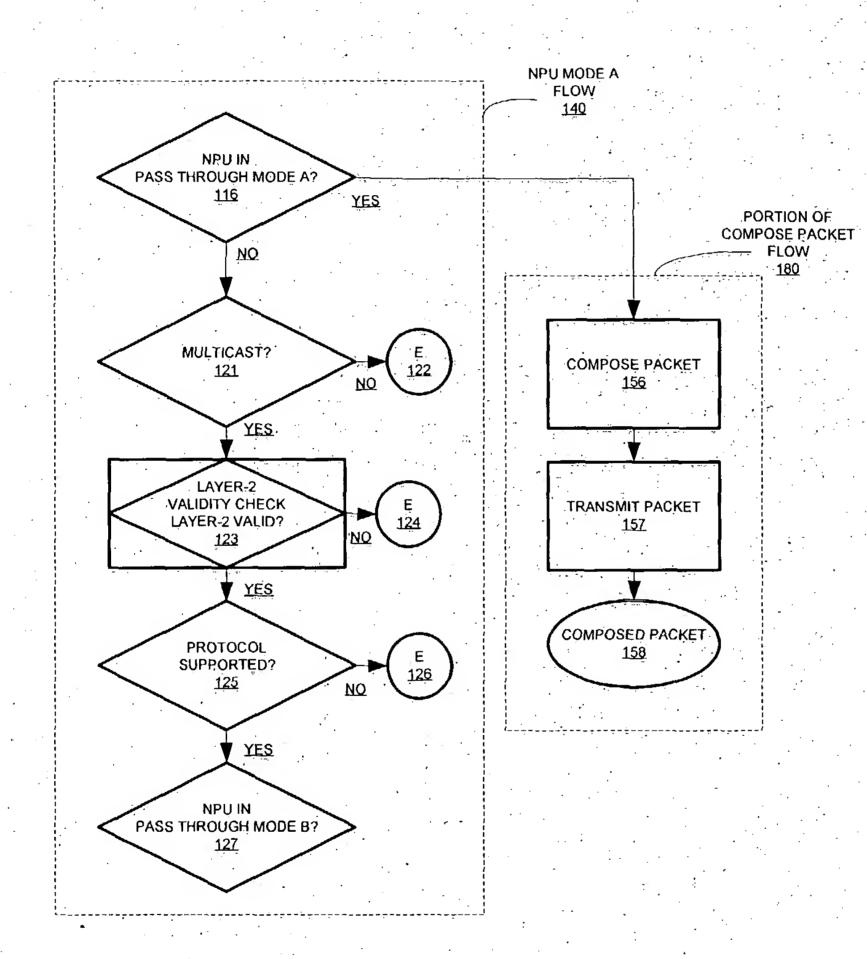


FIG. 2B-1

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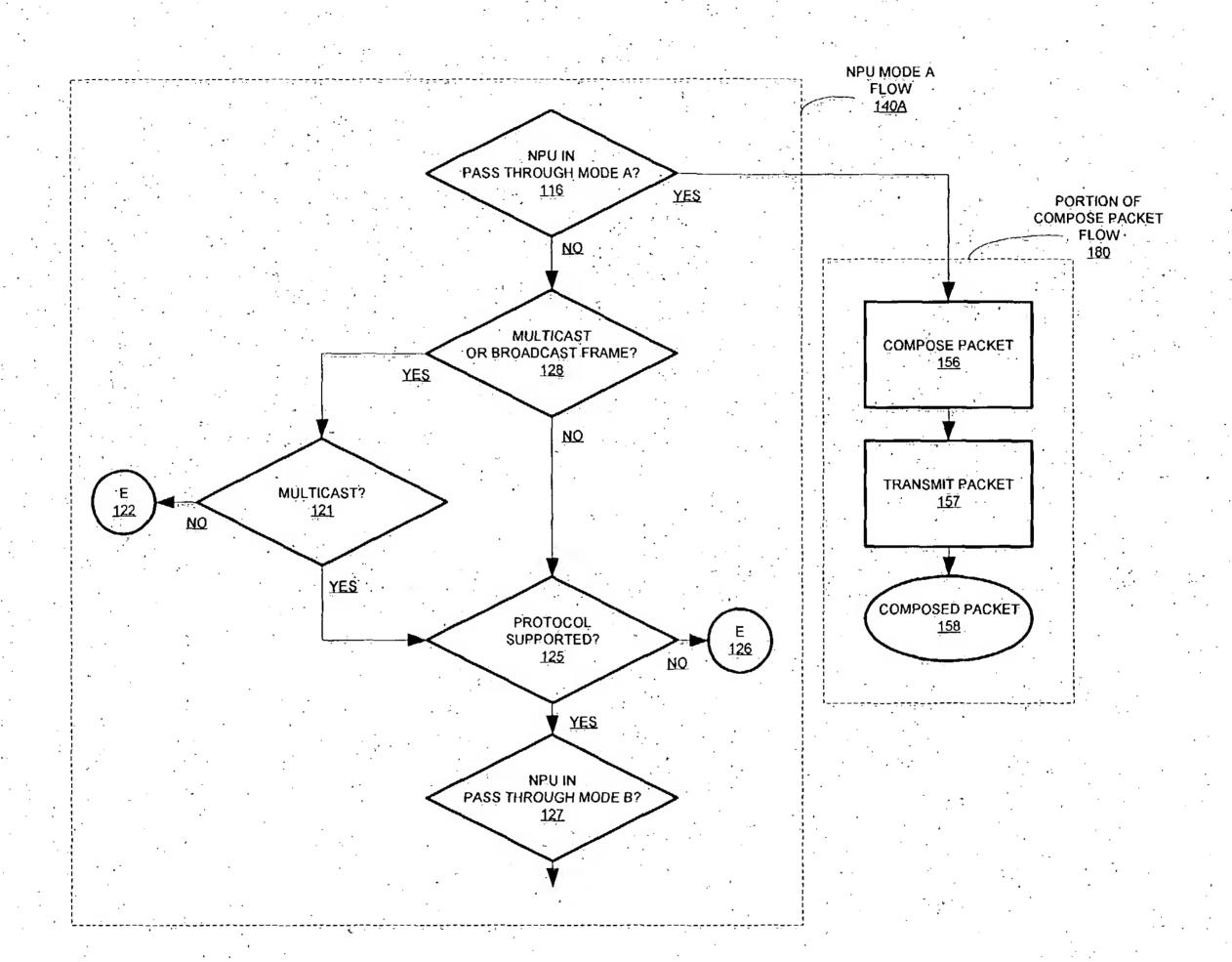


FIG. 2B-2

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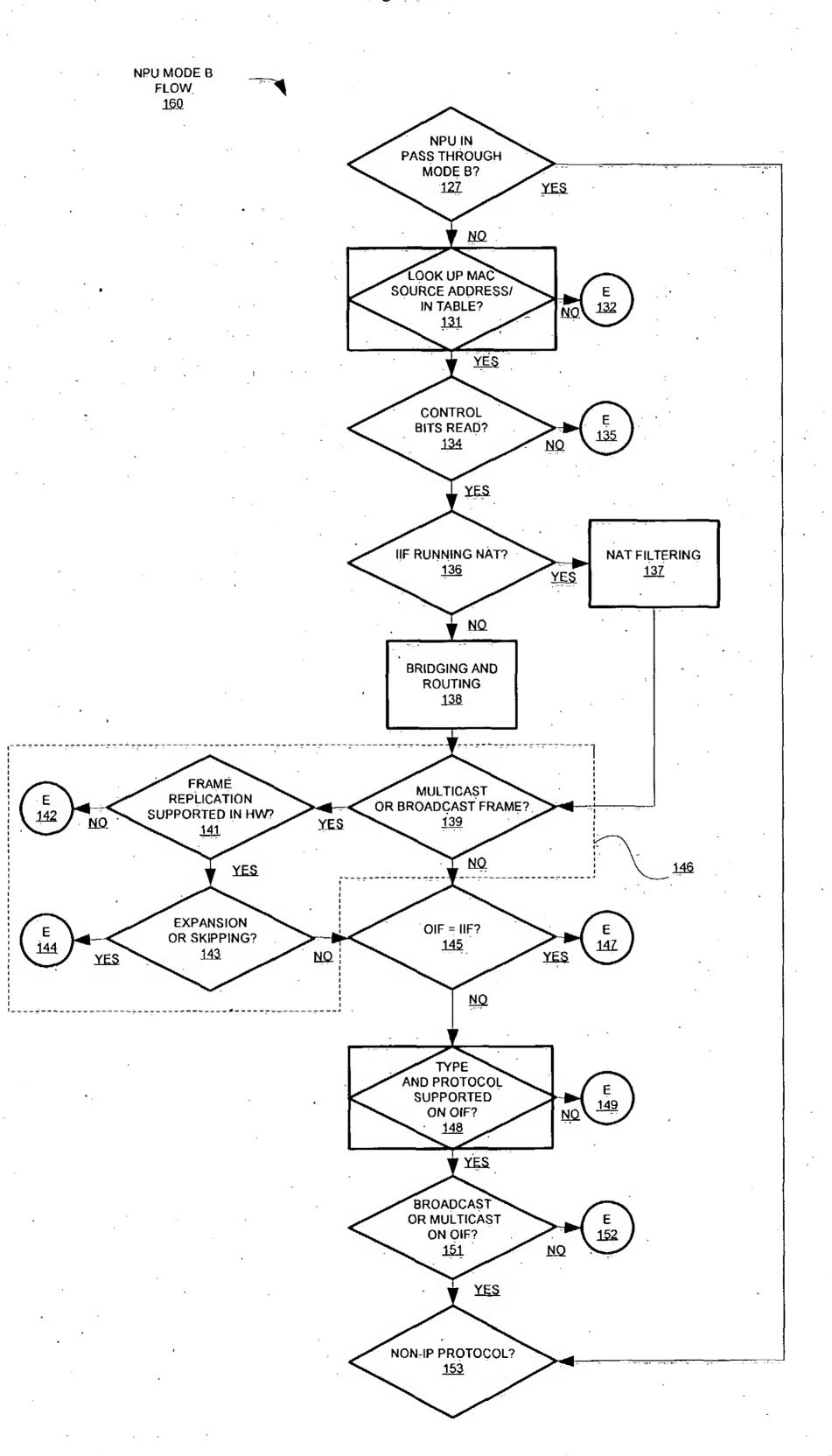


FIG. 2C

NVDA P000802 US Unkown

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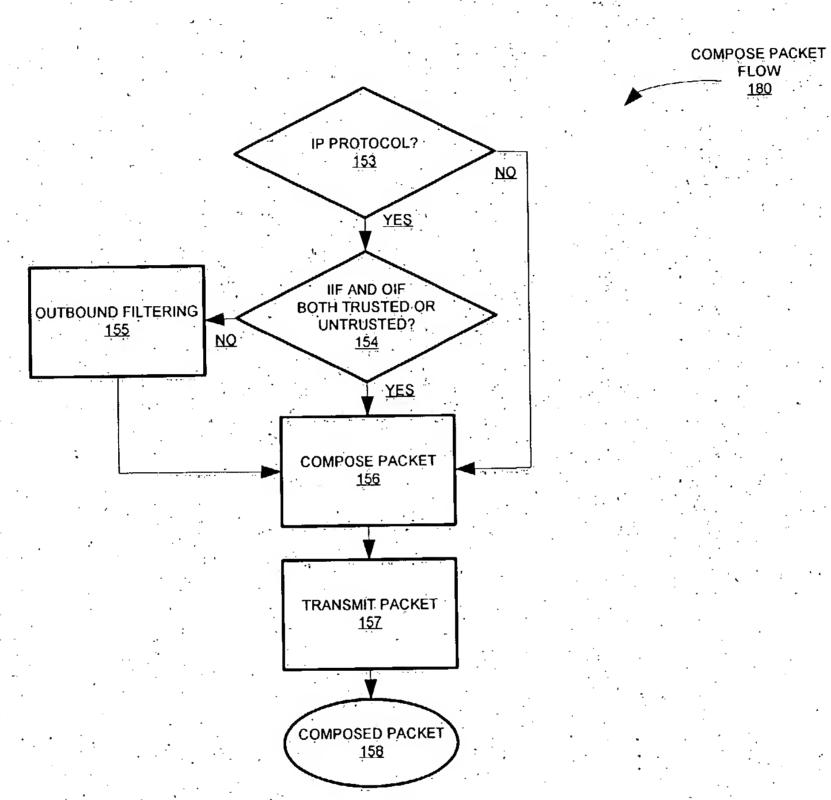


FIG. 2D-1

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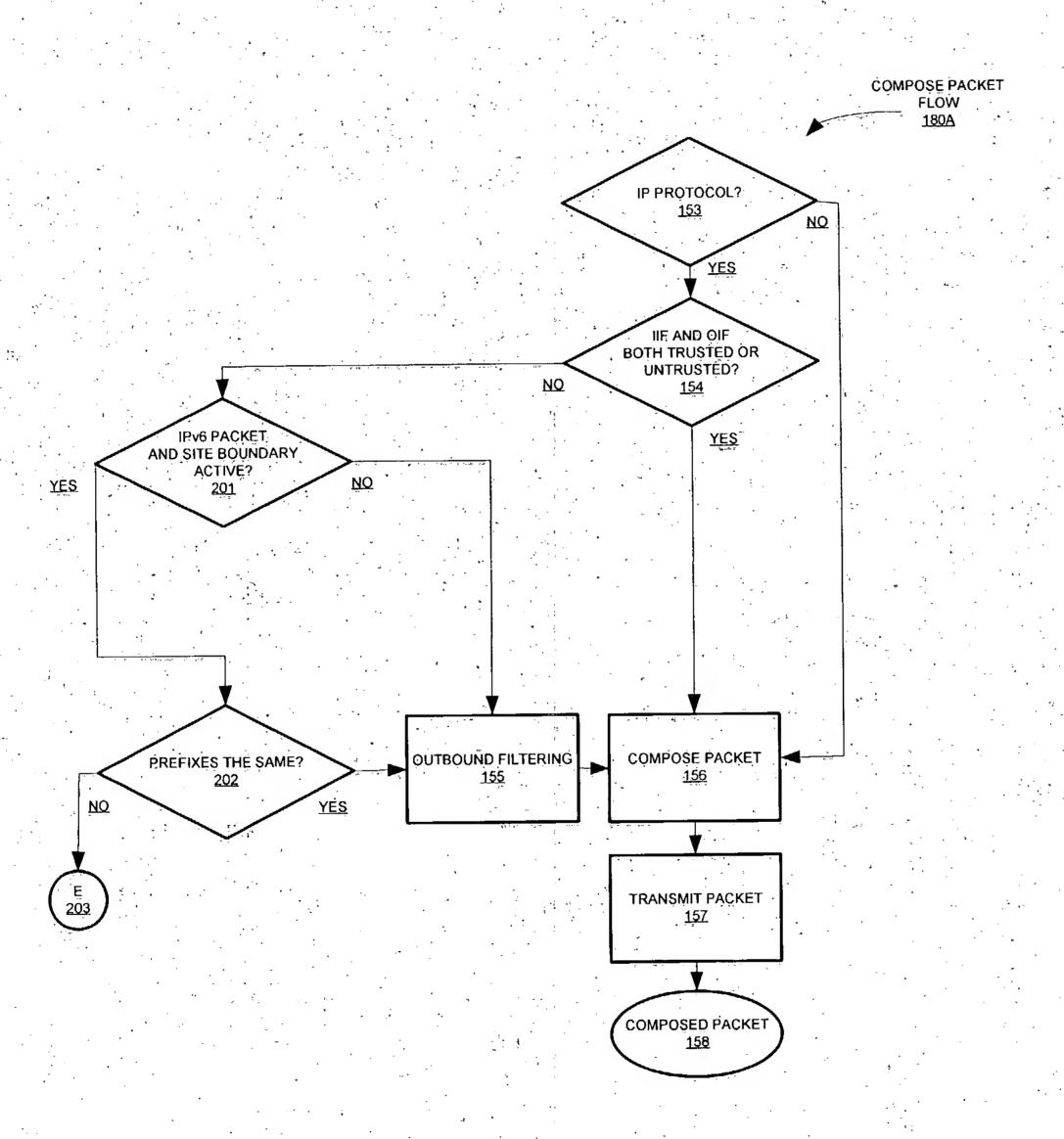


FIG. 2D-2

Atty Dkt. No. NVDA P000802 US
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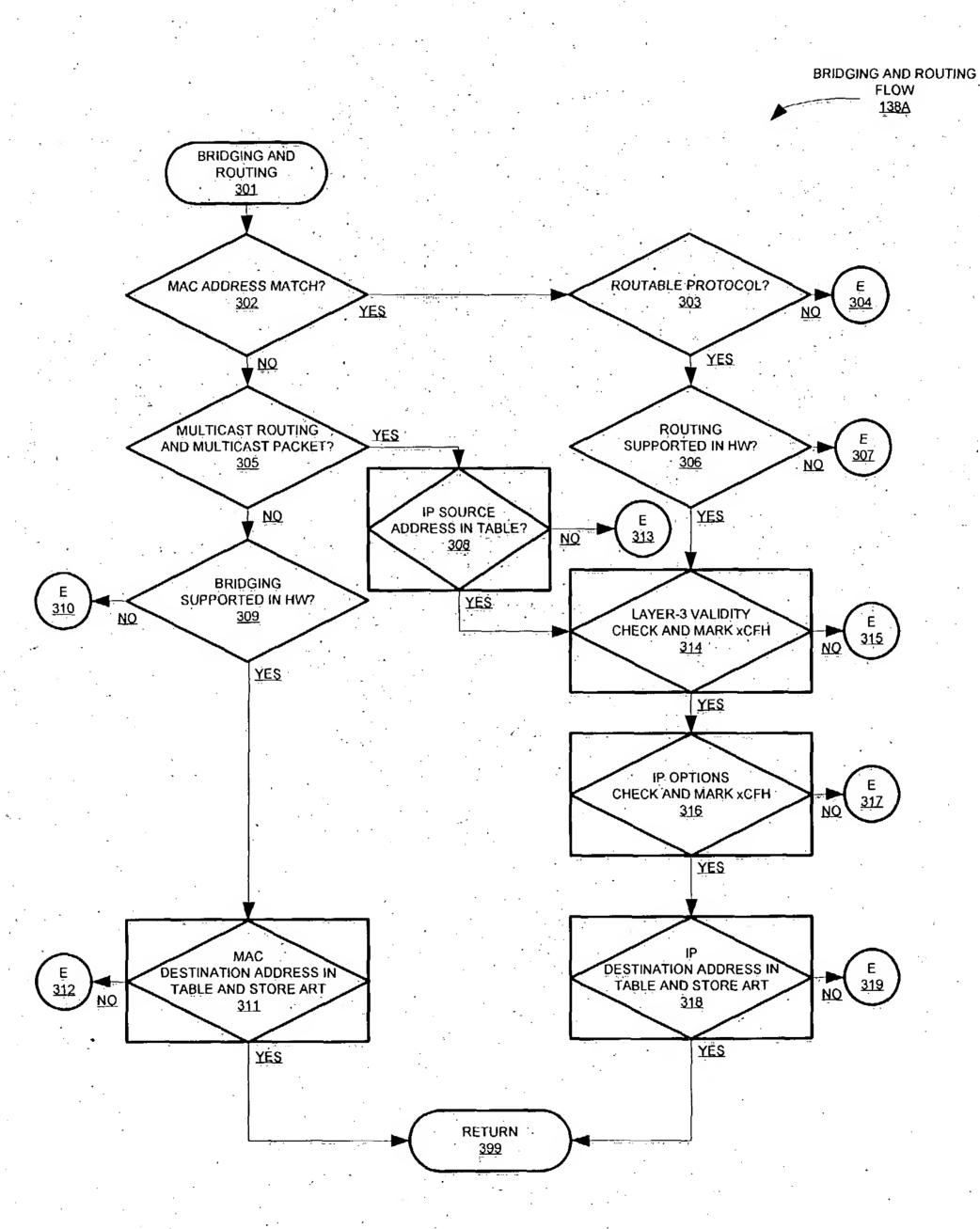


FIG. 3A

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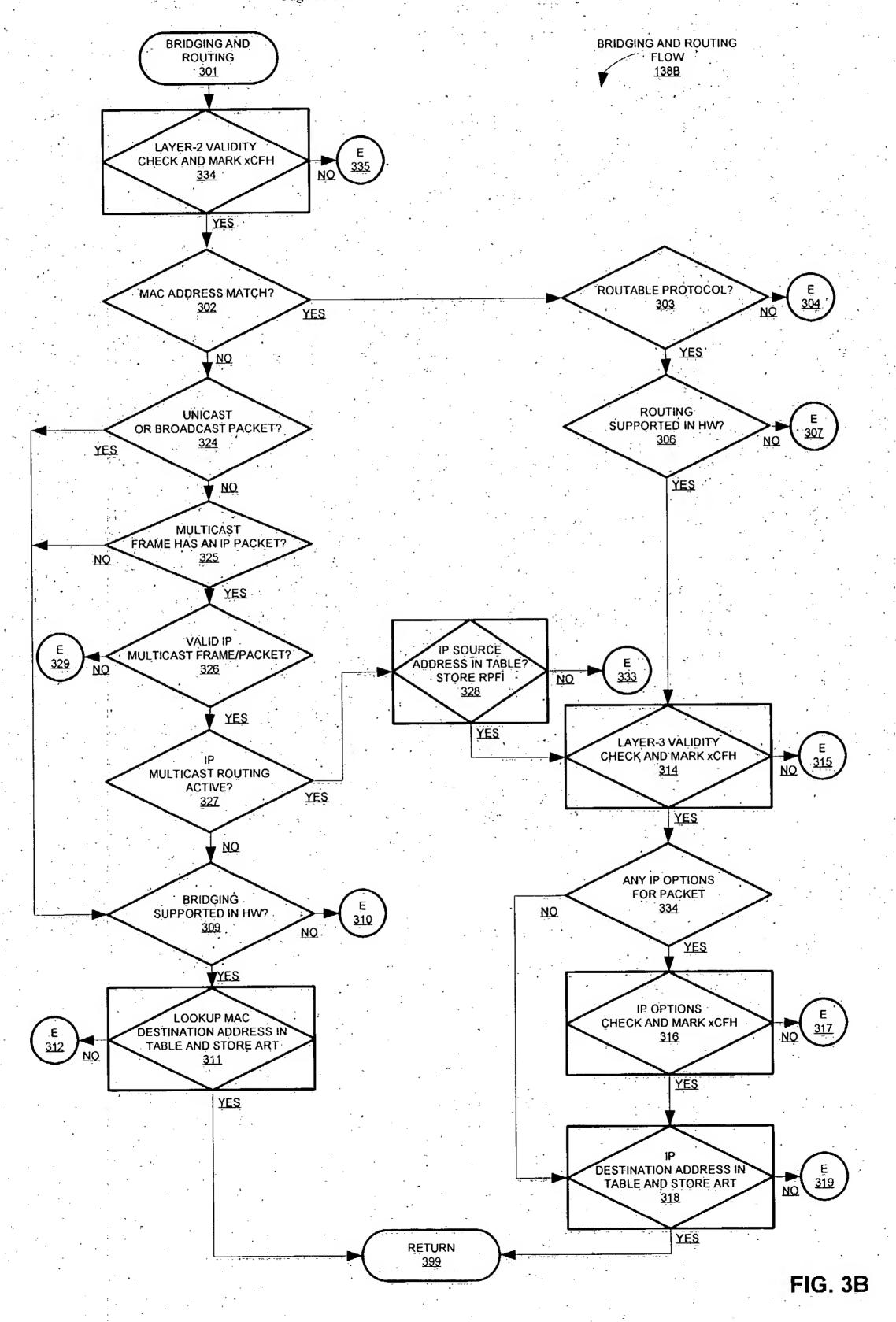
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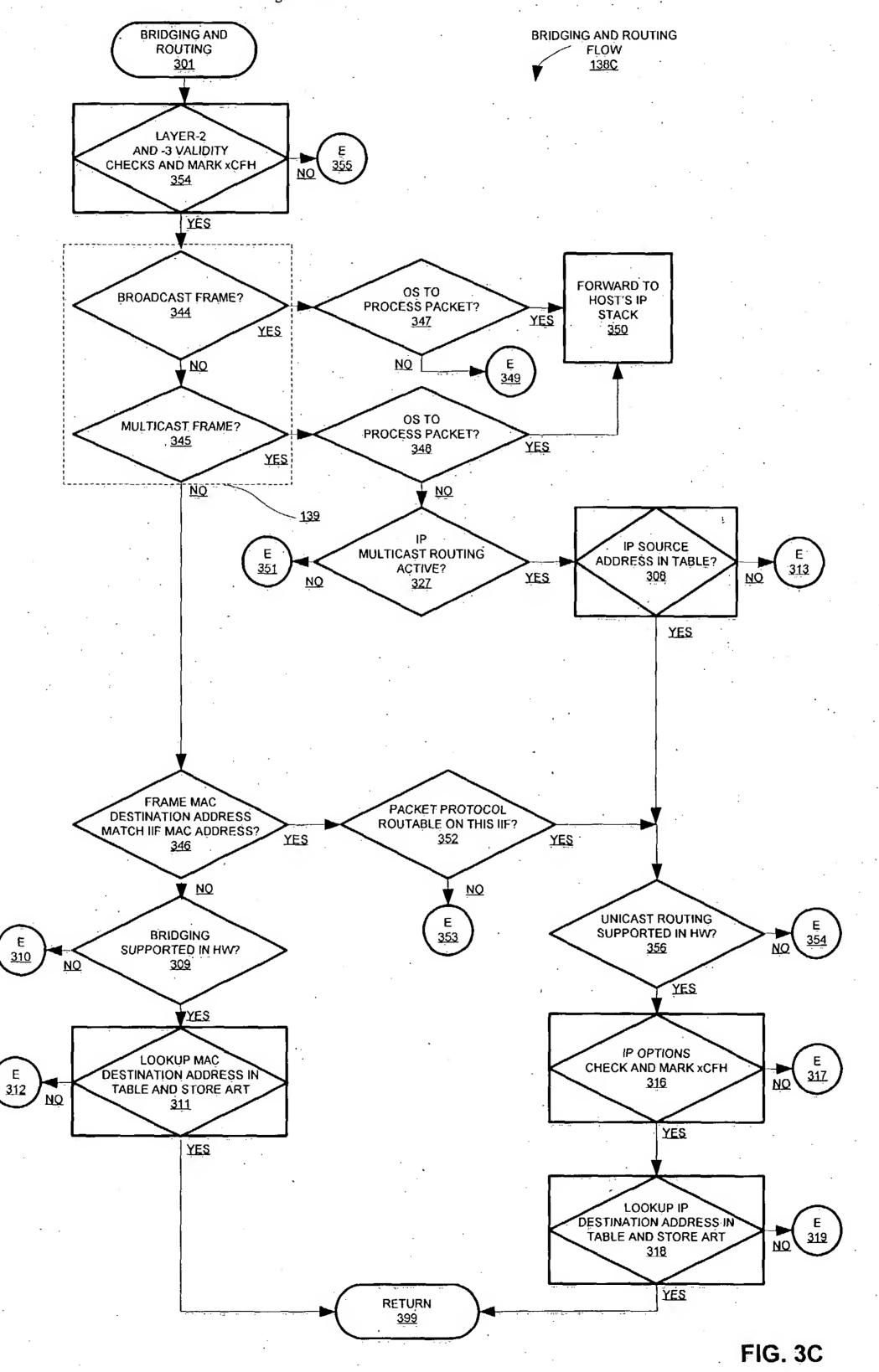
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Herewith Filed: Applicant: Maufer et al.
Title: NETWORK PROTOCOL PROCESSING FOR FILTERING PACKETS Express Mail No.: EV 324942727 US Page 12 of 25 INBOUND NAT (INAT) FILTERING NAT FILTERING 401 FLOW HW SUPPORT FOR NAT? 402 YES LAYER-2/LAYER-3 VALIDITY CHECK(S) OKAY? 404 NO YES IP OPTIONS OKAY? 406 NQ YES IP FRAGMENT? 408 ÅΝ̈́O FOR NEW CONNECTION? TCP PACKET? 411 YES NO NQ MATCH IN TABLE? STORE CT INDEX IN CFH UDP PACKET?' YES 414 NO YES MATCH IN TABLE? **GRE PACKET?** STORE CTINDEX IN CFH 417 418 YES YES NO MATCH IN TABLE? STORE CT INDEX IN CFH IPSEC PACKET? <u>420</u> YES <u>421</u> NO NQ YE\$ **OBTAIN AND** STORE NT INDEX IN CFH IN LIST? 425 ICMP PACKET? E <u>426</u> 416 423 YES **YES** ₩Q E 424 OBTAIN AND STORE ART INDEX IN CFH 427 RETURN

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Unkown

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FIG. 4A

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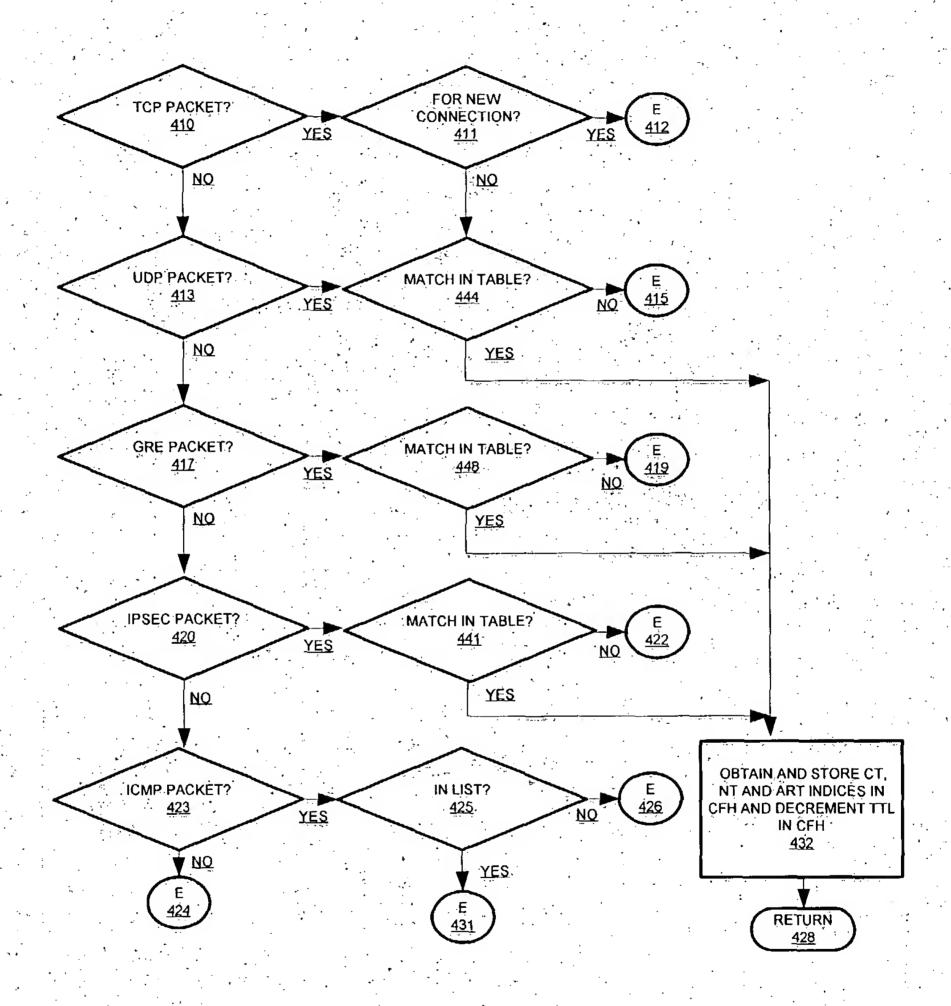
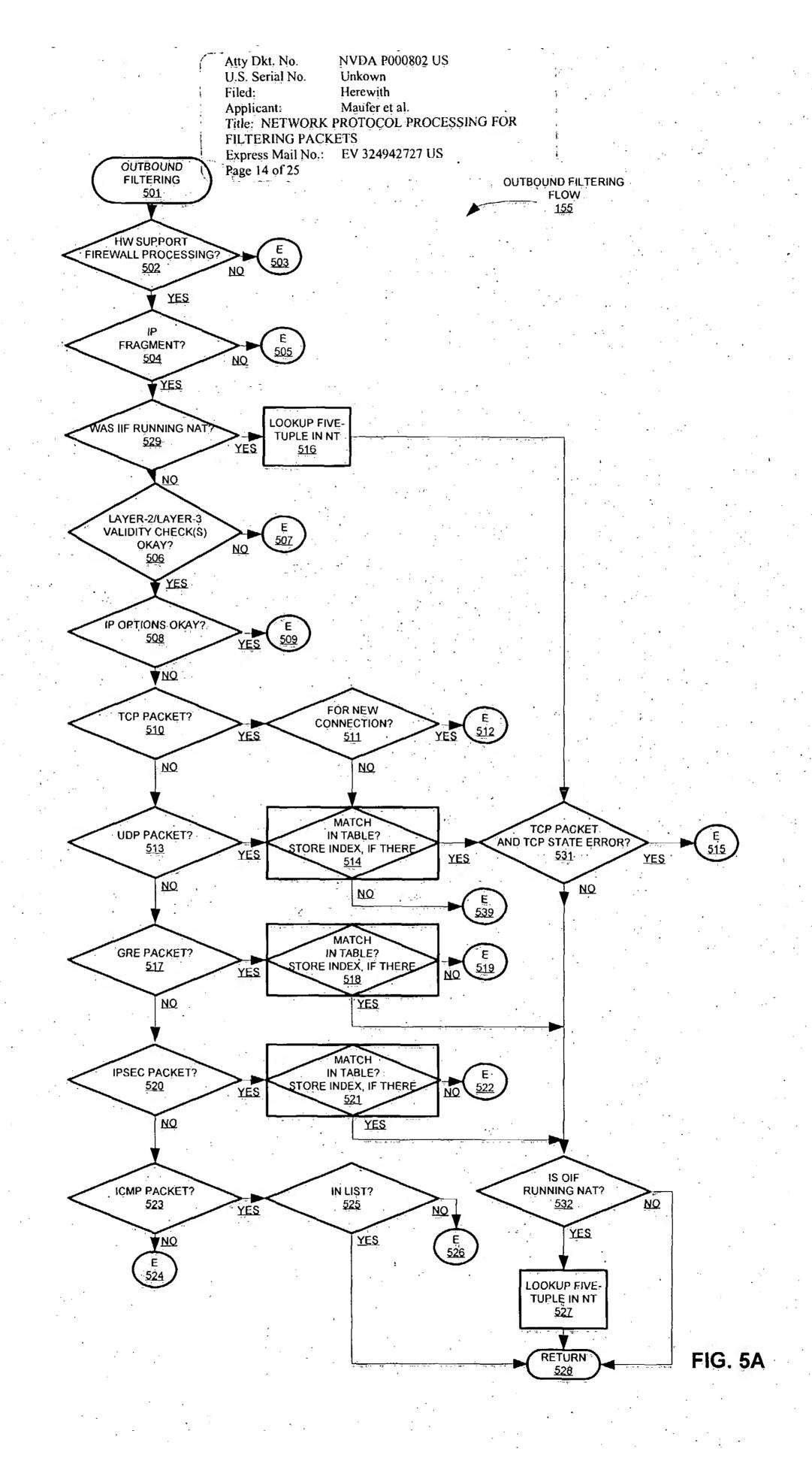


FIG. 4B



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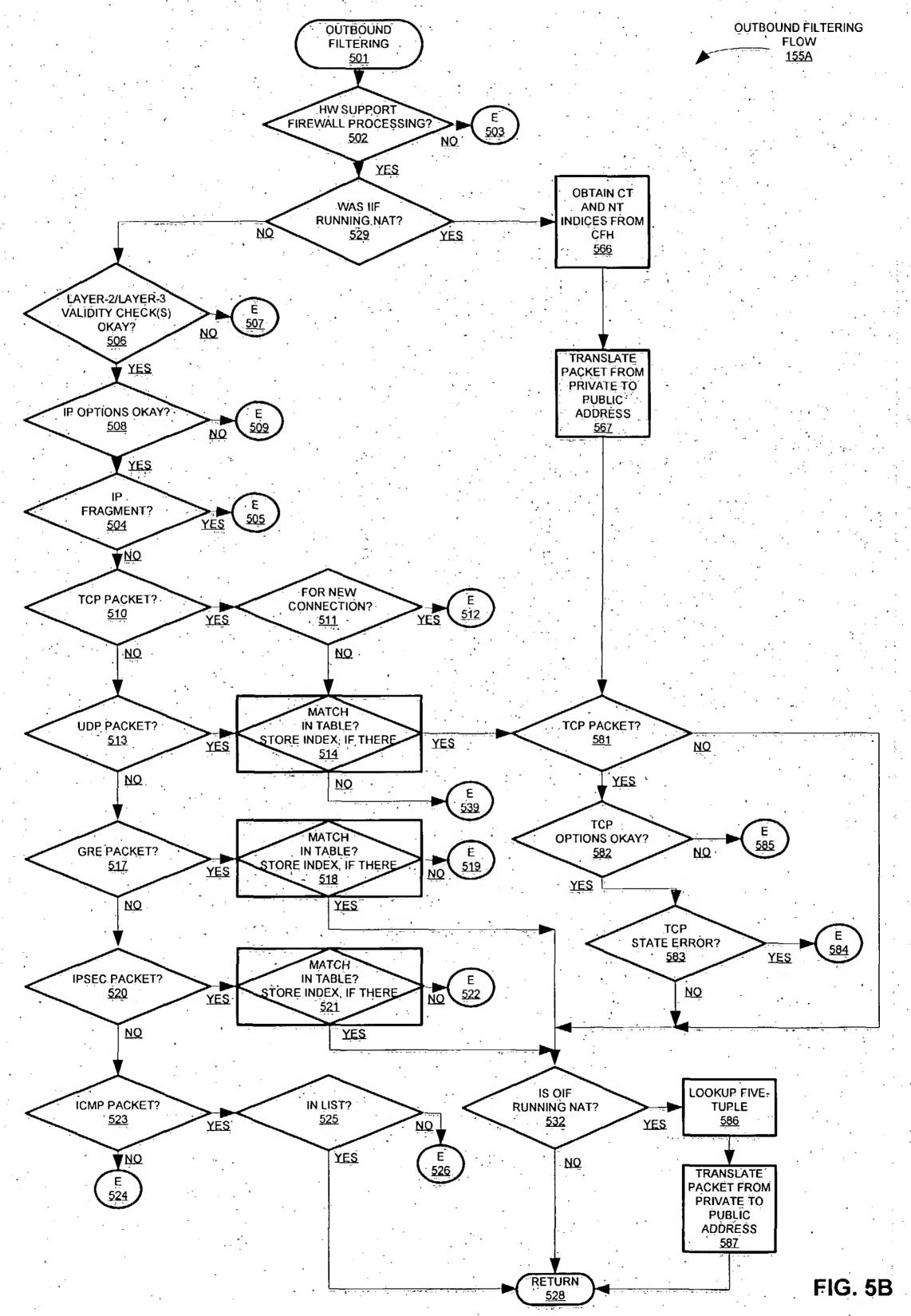
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ART REMOTE IP SPI/CALL ID LOCAL IP REMOTE PORT NT INDEX LOCAL PORT IP PROTOCOL TCP STATE SECOND SECO
--

FIG. 6.

NT 700

	DEMOTERS		BUD IO ID	-	J		
ART INDEX 601	REMOTE IP ADDR <u>602</u>	SPI/CALL ID <u>603</u>	PUBLIC IP ADDR 704	REMOTE PORT 605	CT INDEX 706	PUBLIC PORT 707	IP PROTOCOL 608

FIG. 7

ART 800

٠	7	· · · · · · · · ·		
	ART INDEX	MAC ADDR	VIRTUAL LAN ID	INTERFACE MASK
	601	<u>801</u>	802	803
ı				

FIG. 8

IP DESTINAT ADDR 901	ON IP SOURCE ADDR 902	ART INDEX 601
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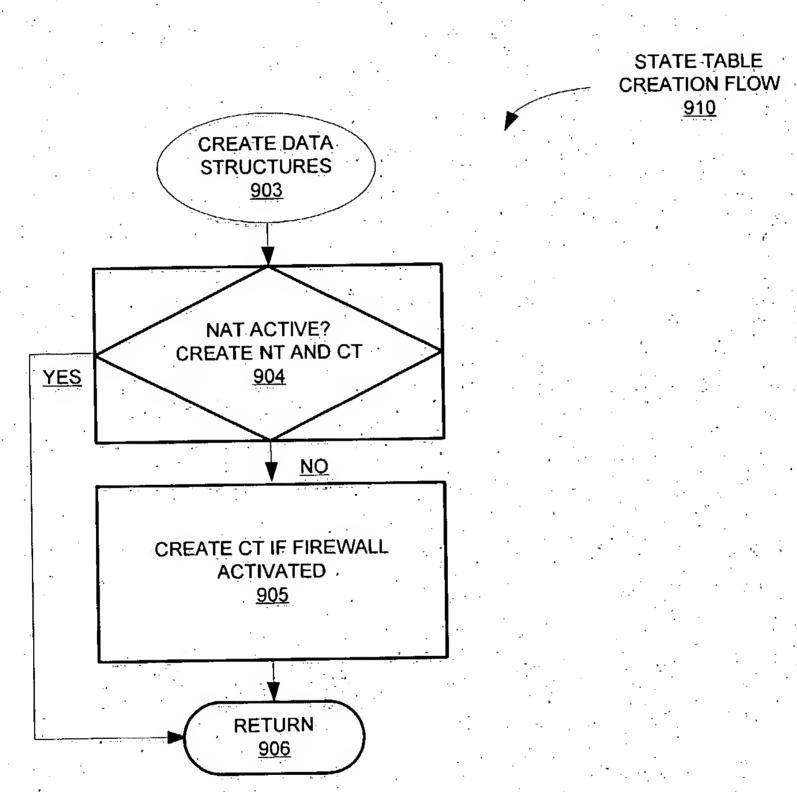


FIG. 9B

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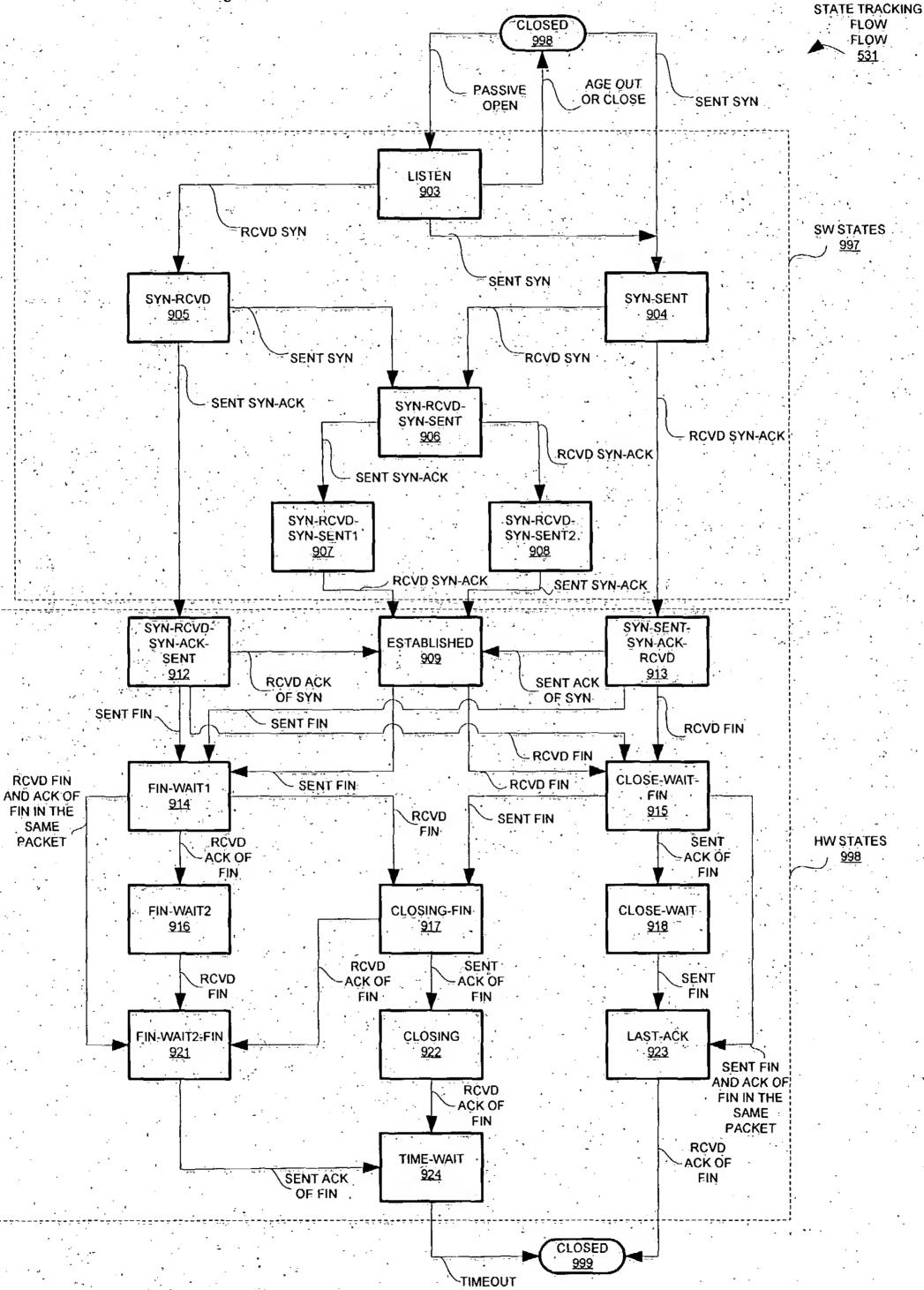
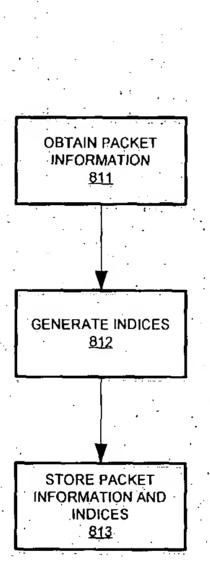


FIG. 10

Atty Dkt. No. NVDA P000802 US
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DATA POPULATION FLOW 850

FIG. 11

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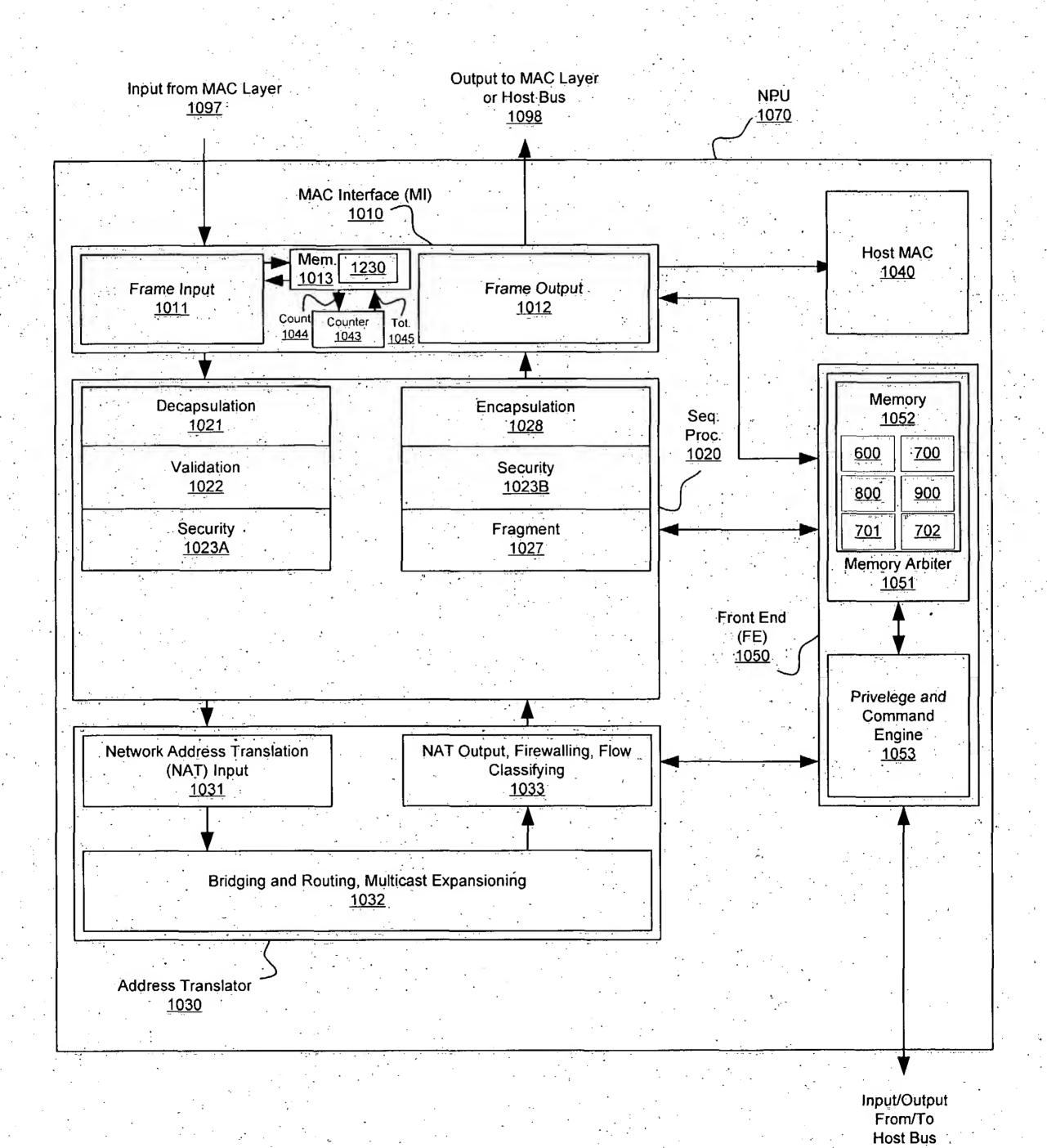
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1099

Atty Dkt. No. U.S. Serial No. NVDA P000802 US Unkown Herewith Filed: Maufer et al. Applicant: Title: NETWORK PROTOCOL PROCESSING FOR FILTERING PACKETS Express Mail No.: EV 324942727 US Page 21 of 25 PACKET PROCESSING FLOW 1080 **PACKETS** 1060 RECEIVE PACKETS TO NPU AND **BUFFER PACKETS/ INCREMENT** COUNTER <u>1061</u> **CHECK CT FOR AN ENTRY FOR EACH PACKET** 1062 ENTRY IN CT? 1063 YES NO SEND PACKET TO **NPUsoft** READY? 1064 1073 NO SEND **BUILD CT ENTRY** YES **PACKET** 1065 TO **NPUsoft** 1079 **BUFFER PACKET** 1074 PROCESS PACKET IN SEQENCE 1066 SEND PROCESSED PROCESS PACKET PACKET TO NPU 1075 1067 BUFFER EMPTY <u>1068</u> NO YES **SET READY FLAG DECREMENT PROCESSED ASSOCIATED WITH** COUNTER/ **PACKETS CT ENTRY** FORWARD PACKET 1076 <u>1071</u> 1072

FIG. 12B

1081

1082

OBTAIN NEXT PACKET FROM BUFFER 1069

> SEND NEXT PACKET TO NPU 1077

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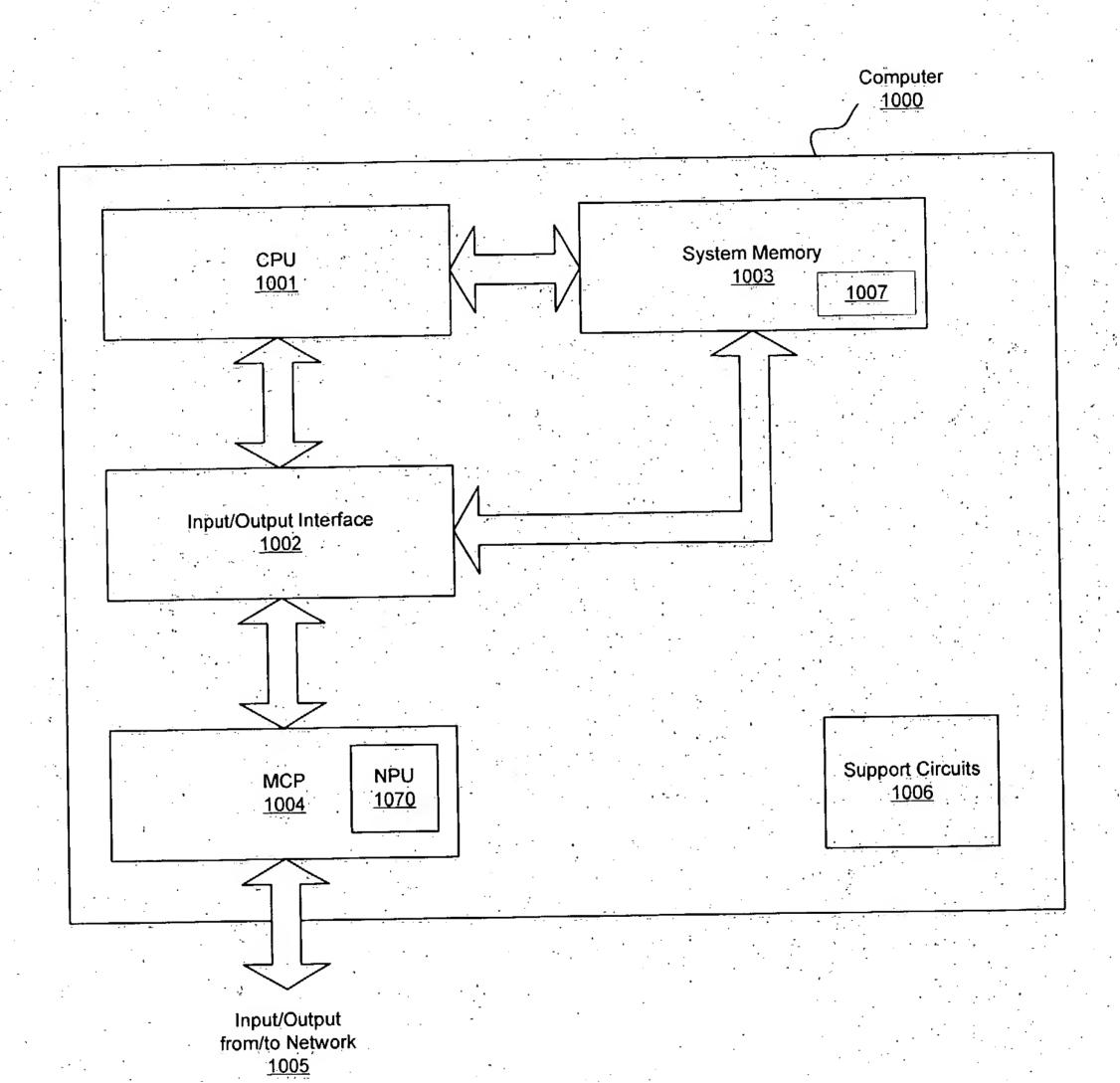


FIG. 13

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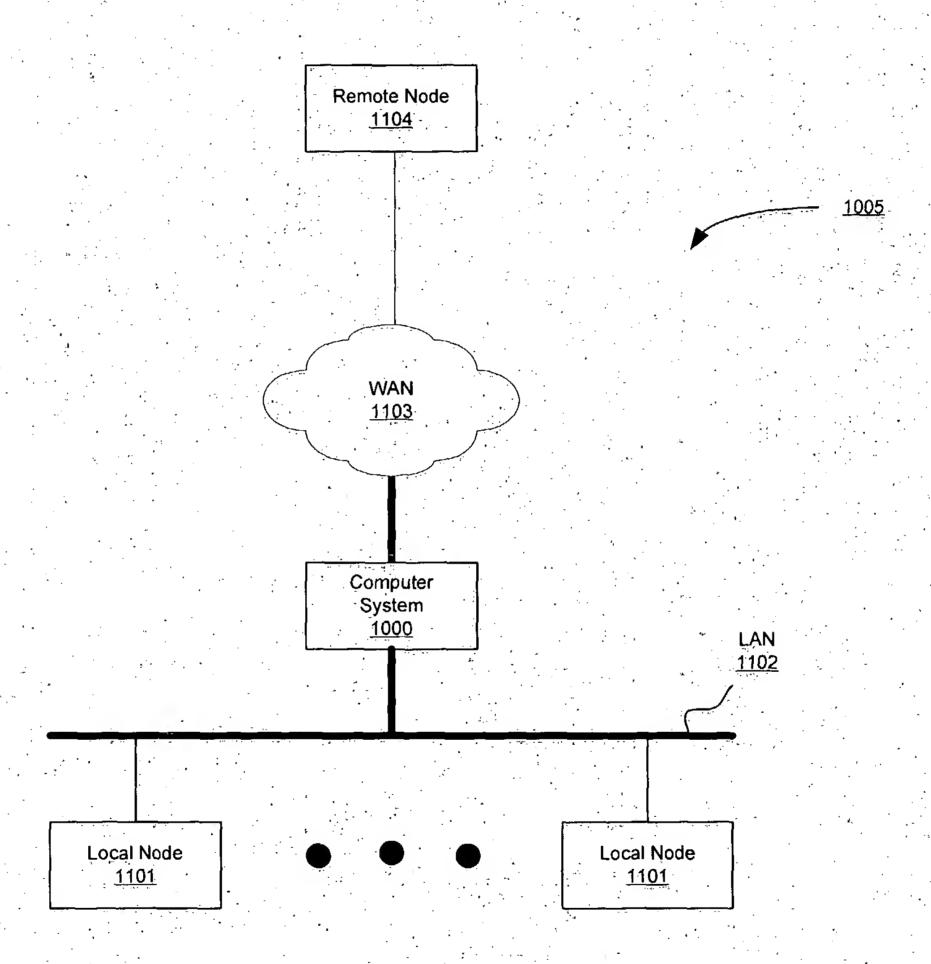


FIG. 14

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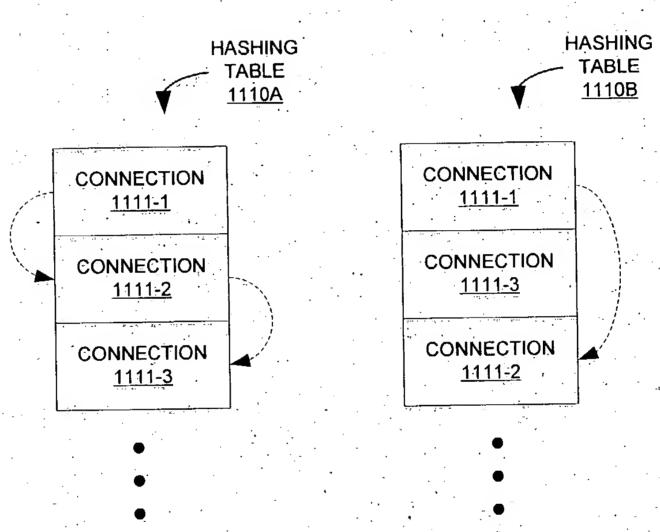


FIG. 15A

FIG. 15B

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Herewith

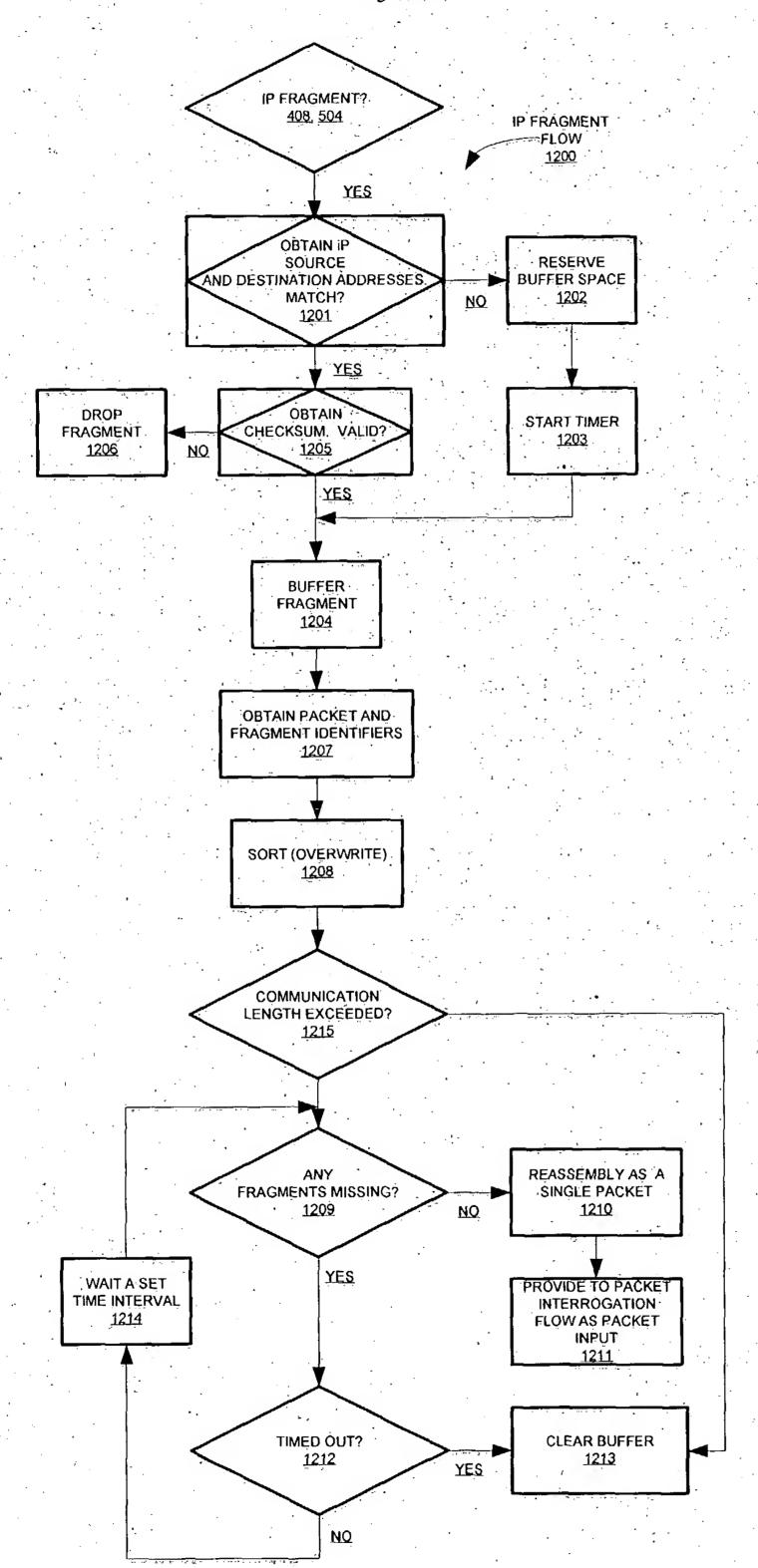
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BUFFER STACK 1230
FRAGMENT 1
FRAGMENT 3

FIG. 17

FRAGMENT N

FIG. 16